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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,626	10/22/2001	Ridha M. Hamza	1100.1150101	1419

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EXAMINER	
BHAT, ADITYA S	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/014,626	Applicant(s) HAMZA, RIDHA M.
	Examiner Aditya S. Bhat	Art Unit 2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 09 June 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) 29 and 31 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2,9-12,14-28,30,32 and 33 is/are rejected.

7)☐ Claim(s) 3-8 and 13 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 October 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 9-12, 14-28, 30, and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Corrado et al. (USPN 5,890,085)

With regards to claim 1, Corrado et al. (USPN 5,890,085) teaches a plurality of sensors each providing a location of the object with an associated sensor uncertainty distribution; (Refer to figure 23) and

a data processor configured to read location data from two or more sensors wherein said data processor combines the location data and the associated sensor uncertainty distributions from said two or more sensors and generates a value indicative of the most likely position of the object. (Refer to figure 14)

With regards to claim 2, Corrado et al. (USPN 5,890,085) teaches the associated sensor uncertainty distribution is dependent on one or more performance characteristics for the sensor. (Col. 4, lines 19-23)

With regards to claim 9, Corrado et al. (USPN 5,890,085) teaches the data processor is configured to determine a probability distribution for a position of the object based on the location data and the associated sensor uncertainty distribution from each of the at least two sensors. (Refer to figure 20-21)

With regards to claim 10, Corrado et al. (USPN 5,890,085)teaches each probability distribution for the position of the object includes a value indicating a likely position of the object. (Refer to figure 20-21)

With regards to claim 11, Corrado et al. (USPN 5,890,085)teaches each probability distribution for the position of the object is segmented into a plurality of sub-ranges. (Refer to figure 20-21)

With regards to claim 12, Corrado et al. (USPN 5,890,085)teaches each sub-range has an associated probability value indicative of the likely position of the object within the sub-range. (Refer to figure 20-21)

With regards to claim 14, Corrado et al. (USPN 5,890,085)teaches the probability distributions for the position of the object have common sub-ranges. (Refer to figure 20-21)

With regards to claim 15, Corrado et al. (USPN 5,890,085) teaches a conjunctive fusion method is applied to a plurality of parameters affecting sensor reliability said method providing an estimation of intersection points of probability measures by identifying the sub-range with the most likely probability of defining the objects position (Refer to figure 20-21)

With regards to claim 16, Corrado et al. (USPN 5,890,085)teaches each sensor indicates a likely position of the object; each sensor yields an associated probability distribution for the position of the object; (Refer to figure 23) and each probability distribution for the position of the object is separated into a plurality of sub-ranges, said

sub-ranges being applied to each probability distribution for the position of the object. (Refer to figure 20-21)

With regards to claim 17, Corrado et al. (USPN 5,890,085)teaches each sub-range, the probability values associated with each sensor are manipulated using statistical means to generate a value indicative of the most likely position of the object and an associated probability distribution for the most likely position of the object. (Refer to figure 20-21)

With regards to claim 18, Corrado et al. (USPN 5,890,085) teaches that the system is adapted for optimizing the distance between objects. (Refer to figure 1-8)

With regards to claim 19, Corrado et al. (USPN 5,890,085) teaches adapted for tracking the relative location of a plurality of objects. (Refer to figure 3-5)

With regards to claim 20, Corrado et al. (USPN 5,890,085)teaches the plurality of sensors includes a plurality of radar systems. (24, 26; Refer to figure 14)

With regards to claim 21, Corrado et al. (USPN 5,890,085)teaches the plurality of sensors includes a plurality of beacon systems. (24, 26; Refer to figure 14)

With regards to claim 22, Corrado et al. (USPN 5,890,085) teaches a global a system to determine a global position of one or more objects said system comprising:

a plurality of local systems with each local system providing a value indicative of the most likely position of the object;(Refer to figure 1-8) (each seat has sensors corresponding to that particular seat, since it is within reasonable interpretation for a car to have more than one seat, the combination of the sensors and the seats can be interpreted as a local system)

wherein each of the local systems includes

a plurality of sensors each providing a location of the object with an associated sensor uncertainty distributions to generate a value indicative of the most likely position of object; (Refer to figure 23)

wherein each of the local systems transmits the values indicative of the most likely position of the object to a central processing center that determines the global position of the one or more objects. (Refer to figure 23)

With regards to claim 23, Hibino et al. (USPN 5,510,990 teaches each local system provides a probability distribution for the most likely position of the object. (Refer to figure 20-21)

With regards to claim 24, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely position of an object, said method comprising:

receiving location data and an uncertainty distributions for the object from each of a plurality of sensors; (Refer to figure 23)

combining the location data and the uncertainty distributions to generate a value indicative of the most likely position of the object, (Refer to figure 20) and

combining the location data and the uncertainty distributions to generate a probability distribution for the most likely position of the object. (Refer to figure 23)

With regards to claim 25, Corrado et al. (USPN 5,890,085)teaches a

a plurality of sensors, each sensor indicating a likely position of the object and each sensor yielding an associated probability distribution for the position of the object; (Refer to figure 23)

segmenting each probability distribution for the position of the object into a plurality of sub-ranges, said sub-ranges being identically applied to each probability distribution for the position of the object; (Refer to figure 21) and

each sub-range having a probability value and an associated probability distribution for the position of the object. (Refer to figure 21)

With regards to claim 26, Corrado et al. (USPN 5,890,085)teaches using statistical means to manipulate the associated probability values for each sub-range and generating a value indicative of the most likely position of the object. (Refer to figure 20-21)

With regards to claim 27, Corrado et al. (USPN 5,890,085)teaches using statistical means to manipulate the associated probability values for each sub-range and generating a probability distribution for the most likely position of the object. (Refer to figure 21)

With regards to claim 28, Corrado et al. (USPN 5,890,085)teaches method to determine a most likely global position of an object, said method comprising the steps of;

receiving from a plurality of local systems a data on the most likely position of the object; (Refer to figure 23)

combining the data from the plurality of local systems; (66;Refer to figure 13)

generating a value indicative of the most likely global position of the object based on the data from the plurality of local systems; (Refer to figure 20)

wherein at least selected local systems include two or more sensors wherein each sensor provides location data and a probability distribution for the object, wherein the at least selected local systems combine the location data and the probability distribution from at least two of the two or more sensors and provide combined local location data and a combined local probability distribution for the object, the combining step combining the combined local location data and the combined local probability distributions from at least selected local systems and generating a value indicative of the most likely global position of the object. (Refer to figure 23)

With regards to claim 30, Corrado et al. (USPN 5,890,085)teaches at least two of the local systems are physically spaced from one another. (Refer to figure 1-8) (each seat has sensors corresponding to that particular seat, since it is within reasonable interpretation for a car to have more than one seat, the combination of the sensors and the seats can be interpreted as a local system)

With regards to claim 32, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely global position of an object, said method comprising:

providing two or more local systems, wherein each local system includes at least one sensor that provides location data and a probability distribution for the object; (Refer to figure 1-8) (each seat has sensors corresponding to that particular seat, since it is within reasonable interpretation for a car to have more than one seat, the combination of the sensors and the seats can be interpreted as a local system) (Refer to figure 23) and

combining the location data (80; Refer to figure 14) and the probability distribution from at least selected local systems to generate a value indicative of the most likely global position of the object.(Refer to figure 18)

With regards to claim 33, Corrado et al. (USPN 5,890,085)teaches a method for determining a most likely position of an object, said method comprising:

a plurality of sensors each providing a location of the object with an associated sensor uncertainty distribution, wherein for each sensor, the associated sensor certainty distribution is dependent on one or more performance characteristics for that sensor; (Refer to figure 23)

a data processor configured to read location data from tow or more sensor wherein said data processor combines the location data and the associated sensor uncertainty distributions from said two or more sensors and generates a value indicative of the most likely position of the object (66; Refer to figure 13)

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims 3-8, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:
Regarding claims 3-8, and 13:

The primary reason for the allowance of claim 3 is the inclusion of the method steps of: a set of fuzzy logic rules applied to the one or more performance characteristics. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 4 is the inclusion of the method steps of: a set of fuzzy logic rules applied to the one or more parameters that affect the one or more performance characteristics and/or the sensor uncertainty distribution. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 5 is the inclusion of the method steps of: a neural network applied to the one or more performance characteristics. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 6 is the inclusion of the method steps of: a neural network applied to the one or more parameters that affect the one or more performance characteristics and/or the sensor uncertainty distribution. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 7 is the inclusion of the method steps of: a neural network trained for determining a realization measure indicative of the mean of the sensor reliability measure. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 8 is the inclusion of the method steps of: a neural network trained for determining a realization measure indicative of the mean of the sensor reliability measure. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 13 is the inclusion of the method steps of: parameters affecting sensor uncertainties are manipulated by a conditional probability rule to determine a posteriori conditional probability distribution for each sub-range. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments dated 06 May 2005 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nehls III et al. (USPUB 2002/0120391) teaches a method and system for displaying target vehicle position information Maren et al. (USPN 5,850,625) teaches a sensor fusion apparatus and method and Dickson et al. (USPN 6,445,983) teaches sensor fusion navigator for automated guidance of off road vehicles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya Bhat
June 22, 2005

BRYAN BUI
PRIMARY EXAMINER
6/23/05